

MARINE REVIEW.

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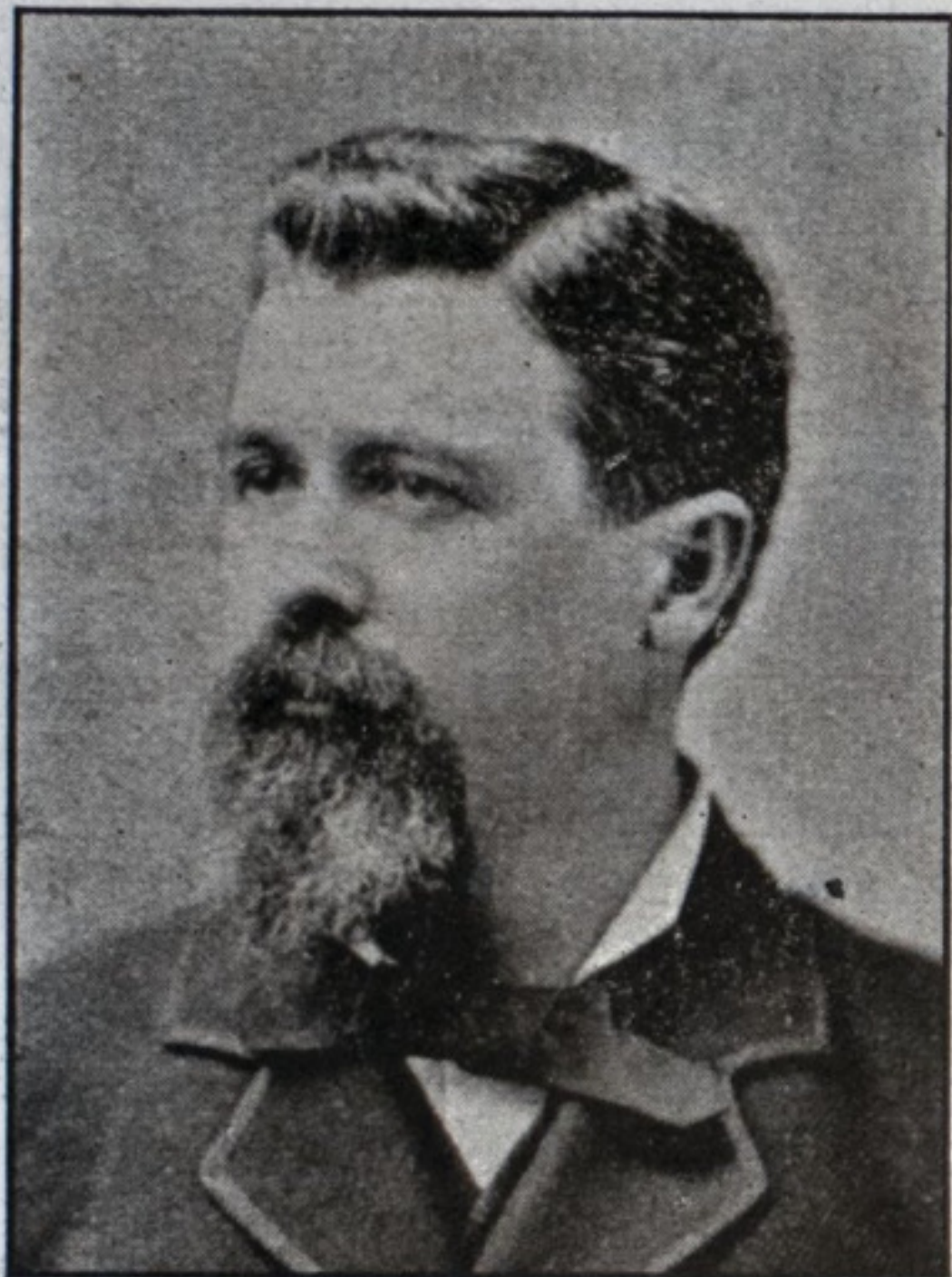
No. 5.

Chicago Line Agents.

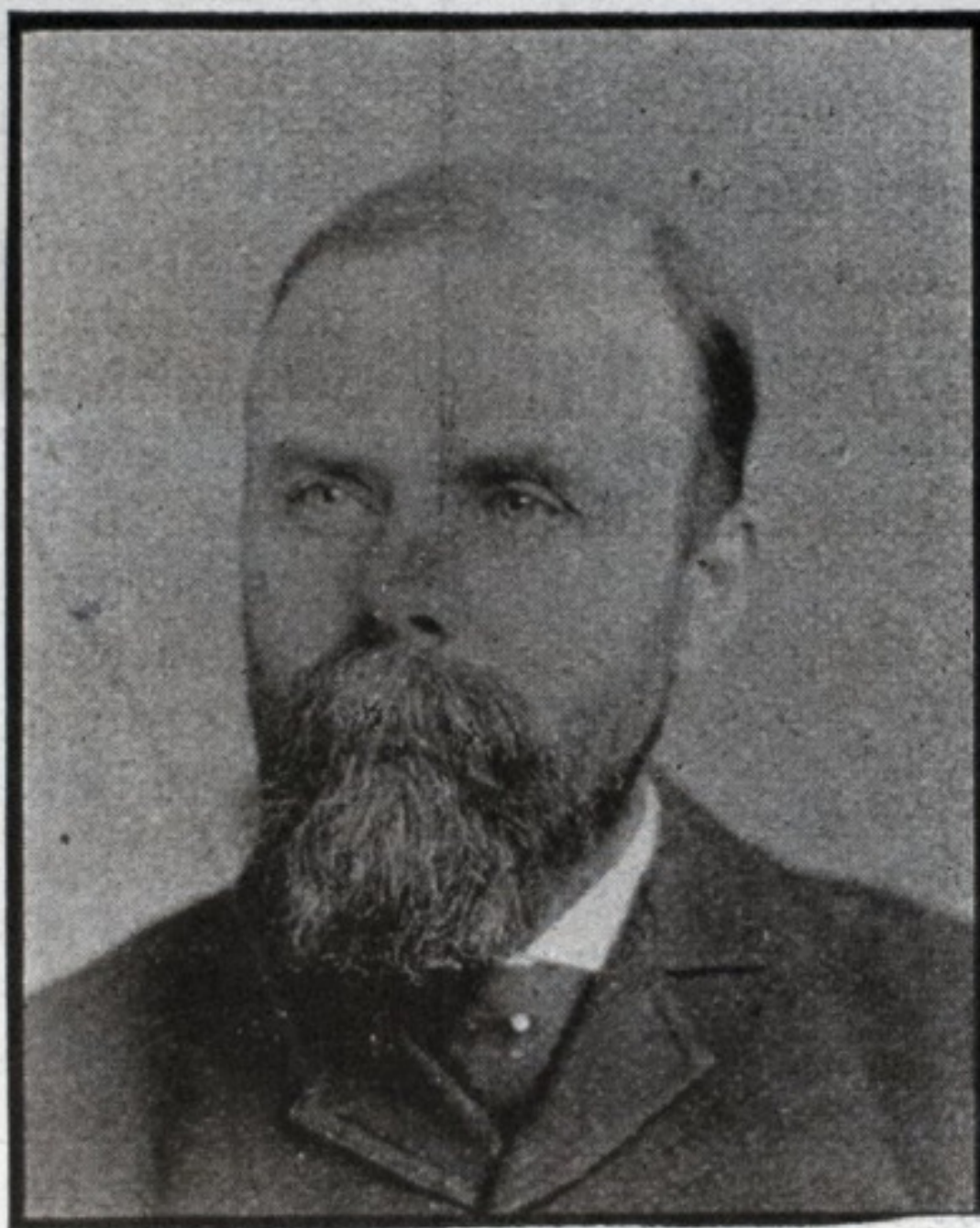
No class of men in the country's transportation are harder worked or carry more multitudinous burdens than the Chicago agents of the through lake and rail lines. From the day that navigation opens until December 1, the close of the season, it is a continued drive. Railway managers and agents share their responsibilities with subordinates, but not so with the line agents; they must oversee the incoming freight and must act as judge in a number of questions which arise. The shippers of package freight must be courted and their patronage secured. The railroad man upon whose shoulders fell these two burdens would surely think that he had enough to do, but in addition to them the line agents are compelled to spend several hours on 'change each day, keeping an ever watchful eye on the course of grain freights. No business on the board of trade requires greater watchfulness, for the boats must have cargoes when they are ready to load regardless of the condition of the market or the turn of lake rates. The railroad man takes what freight he can get, but the line agent is compelled to get the required cargoes whether the business is brisk or dull to the point of deadness. But he has still more to do. His general officers are far at the other end of the line. He is upon the ground and alone knows

entered the transportation business of Chicago. Some years were spent with the commercial run, and then he went to the Union Steamboat Company where he has labored just twenty-one years, three years as assistant agent and eighteen years as agent. As the dean of the line agents Mr. Morford was elected this spring president of their association, which has taken so prominent a part this year in the movement for the improvement of the river. He is a member of the Union league, Iriquois and other clubs, and at the banquet board he is a most genial and entertaining host.

D. B. Linsted, the western agent of the Ogdensburg Transit Company, the lake end of the Central Vermont Railroad line, is the only war veteran of the line agents. He was born in Mount Vernon, O., in 1846, and left school to go into the army at the breaking out of the rebellion, remaining until the last gun was fired. Then he studied medicine, but he did not like the pill business and in 1868 he went to the mining regions of Lake Superior. From there he went to Cleveland with the old Northern Transportation Company. He was transferred here as agent in 1869. In 1876 Mr. Linsted became the agent of the Ogdensburg & Lake Champlain Railroad which was soon absorbed by the Central Vermont. There he has since remained. No man in transportation business has more friends than he, and in Masonic



T. T. MORFORD.



HUGH MAC MILLAN.



D. B. LINSTED.

the conditions surrounding him, thus the line agent necessarily becomes a most important factor in determining the policies of the line, and whether rates will be reduced, maintained or advanced, depends largely upon his judgment.

The veteran lake line in Chicago is the Western Transit Company, the lake end of the New York Central railroad. Hugh MacMillan, Chicago agent, has been with the line most of his manhood days. He was born in Scotland forty-eight years ago, and has the proverbial "fight" of the Scot in his makeup. He came to this country when a child and began sailing before the mast when a mere lad. In 1862 he went to the Western Transit Company, sailing as second and first mates on passenger steamers between Chicago and Buffalo. Then for a time he was master of a schooner, returning to the Western Line as assistant agent under J. W. Tuttle. In 1884 Mr. MacMillan became western agent. He is an incessant worker and from early morn until late at night he is at the helm. When at last Mr. MacMillan decides to give up his position he will have plenty of business of his own to attend to. He has a large stock farm in Kansas, an olive grove in Southern California, and vessel interests. Whether he will take to raising hogs or olives, he says he has not settled in his own mind.

When Mr. MacMillan was mate on a Buffalo passenger steamer, T. T. Morford, for many years agent of the Union Steamboat Company, was checking baggage, and the two boys became fast friends, a friendship which all the rivalry of business has not broken. It was thirty-five years ago that Mr. Morford

circles he stands equally high, having served several years as eminent commander of Chevelier Bayard commandery. He has a beautiful home in Edgewater.

Last spring Stewart Murray came here from Milwaukee to become the western agent of the Lehigh Valley Transportation Company. Beginning with the most disastrous period that the lake marine has ever suffered, Mr. Murray has made an enviable record, and has proved himself competent for the difficult position. For twenty-four years Mr. Murray was contracting agent for the Anchor Line in Milwaukee. Then for a year prior to coming here he was the agent of the Lehigh Valley in the Cream City.

The youngest of the line agents is J. C. Evans, who has represented the Anchor Line for two years. Mr. Evans is but twenty-eight years old, but he has devoted himself thoroughly to the transportation business. His first experience was in 1882, when he became superintendent of the Canal & Lake Steamboat Company, plying between Buffalo and New York city. For a year he was vice-president of that company. He is now treasurer of the Lake Carriers' Association, and is rapidly gaining a leading position in the lake marine.

William Dickinson, agent of the Lackawanna Line, is one of the handsomest men to be seen on the floor of the board of trade. The transportation business forms but a part of Mr. Dickinson's interests, although he is also agent of the Merchants Line, between this city and Montreal. It is said that Mr. Dickinson is rapidly accumulating a fortune in the cement business.

St. Clair River Buoys.

Vessel masters who have examined carefully their charts of the St. Clair and Detroit rivers have probably noticed that in a number of cases the location of buoys as established by the charts is hardly suited to the present deep draft of ore and grain laden vessels. These locations were established at a time when there was no need of even 16 feet of water for vessels navigating the lakes and it has not been learned that any change has been made in placing the buoys each spring. At Woodtick island, near the head of the St. Clair river for instance, there is but 16 to 17 feet of water for several hundred yards above the buoy marking the shoal at the head of the island, and there is shoal water for 500 yards up and down the river from the buoys marking the middle-ground off the town of St. Clair. At both ends of Stag island, also, the buoys as located by the charts are from 400 to 500 yards too close to the island. The shoal water marks at these places are, of course, given a wide berth by deep laden carriers, but it would seem that these locations, established as they were at a time when 20-foot navigation was unthought of, should be changed in accordance with the increased draft of lake vessels.

To Pass on the American Side of Stag Island.

It is understood that Gen. Poe has recommended in his estimates for the forthcoming year an appropriation of \$50,000, to be placed in the hands of the secretary of the treasury and to be drawn on when needed for the removal of obstructions in the rivers between Lakes Huron and Erie. The aim is mainly to get rid of a few bad spots below the city of Detroit, but it is also intended to provide a channel on the American side of Stag island. The Canadian channel at this point is used almost exclusively now, but all that is necessary to provide deep water on the American side is to remove two shoals near the lower end of the island. With these shoals out of the way the channel on the American side would be better than the present Canadian waterway.

Lake Superior Copper Production.

A census bulletin on the production of Lake Superior copper gives some interesting information. During the census year the total amount of ore hoisted to the surface consisted of 2,363,733 short tons, which yielded 86,604,283 pounds of ingot, the average yield being 1.83 per cent. of ingot. Excluding the Calumet, Hecla and Tamarack, the yield was 0.998 of ingot copper. After being crushed and washed the product is called mineral, and 117,804,926 pounds of mineral yielded 84,455,675 pounds of ingot, an average per cent. of 74.24. The difference in tonnage treated and hoisted is accounted for by the rejection of poor rock. The total wages paid for copper mining in the Lake Superior district was \$3,174,363. The wages paid by mines that were included in the production figures were \$3,004,621, so that the labor cost per ton was \$1.27, and per pound of ingot, 3.47 cents.

Favoring the Radical Enlargement of the Erie.

The long talked of project of enlarging the Erie canal to a 20-foot navigation, at a cost of probably \$150,000,000, is again receiving much attention from lake men, and will probably be brought before Congress at the next opportunity. It is a matter of the highest importance for future consideration, as affording the only feasible water connection with the lakes other than through Canadian territory, and besides affording cheap transportation directly between the Atlantic and lake ports, it would take that commerce via New York instead of Montreal. Of course, the scheme will be opposed by the railroad interests, but it is a great big plan and must eventually come within the range of practical demands.—Marine Journal.

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Chat With a Chief Engineer.

"I see there is another case of boiler blister in one of the new whale-shaped barges," said the chief engineer, "and it would be interesting to know who pays for the blister. The engineer says 'soft steel' in the furnace did it and the boiler builder says it was the engineer's negligence that did it. What the owner thinks will cause the biggest argument. The first thing to consider is whether or no the boiler builder would put 'soft steel' into a boiler. Sec. 4430 of the steamboat inspection rules would bear down pretty hard on this 'soft steel,' but a decision from the treasury department a number of years ago only requires inspection of shell plates. In parenthesis I would remark that the United States government pays out at least \$100,000 each year for marine boiler inspection, and pays not one cent for stationary boiler inspection, from which one might infer that marine engineers' lives are worth preserving. But if the 'soft steel' didn't blister the boiler then the engineer did. I suppose you think the engineer went to work and made a mustard plaster and put it on the tenderest spot. No, it is easier than that. Why a mustard plaster wouldn't make a boiler stop 'priming,' not to mention warping it out of shape. The chances are that he forgot to play with the surface blower each watch. How would that have prevented the blistering? This way! When the oil or grease came in with the feed water it swam around on the top until it gathered enough sediment to sink it. And by the way do you know that there is calm weather, nor westers and regular cyclones in your boiler. Sometimes the water is level and quiet and steaming like a mill pond on a spring morning, and sometimes again the water at the bottom thinks it isn't having a fair show at steaming and then the top and bottom water have a stormy time for an hour or two. But this grease gets tired swimming around and if it isn't skimmed off by the surface blower down it goes on the furnace. Then where that lies heat can not get through to the water and it stays in the iron until it is red-hot and blisters. If there is any animal grease in the oil the blister comes very quick. You may think this is funny, but take a tin can and after smearing linseed oil on the bottom inside, fill it full of water, put it over a lighted gas jet and see if the tin don't get red-hot before the water boils.

This blister on the whale-shaped boat's boilers isn't the only case. Why, one of our bran new steel steamers got a touch of it this spring. The engineer said he filled one of the boilers near the gas-house in Chicago river, and as that was the only one burned, it is reasonable to presume that gassy or greasy water caused it. I have in mind a case that happened several years ago on a boat belonging to a large Cleveland fleet. The engineer ran out of oil and bought some at Duluth. It was learned afterwards that the oil was put in a linseed oil can that contained some of the original linseed. Chemists found traces of the linseed oil on the scale, but the engineer said that it was 'soft steel' and the owner believed the engineer, which they sometimes fail to do, I am sorry to say. It came near resulting in a law suit. In fact I don't remember how it did end, but think that the boiler builders convinced the owner. These cases aren't a 'patch on' one or two others I know about. One was on the yacht Peerless. She came from the coast with a surface condenser and the first triple expansion engine that was built in this country. Although the latter was disputed, the former isn't, because as soon as she got away from salt water there was nothing to cut the oil and as all the condensed water goes back to the boiler, all the oil that got into the cylinders went to the boiler and raised — blisters. The Canadian Pacific steamer Campana had the same experience, but let one of our jet condenser steamers go to salt water and I guess there would be some blistering, from a different cause though. The salt left by evaporation would settle down on the crown sheet, and not being used to the salt it would naturally get warm, red hot in fact. A young friend of mine went 'first' in the Ranney a number of years ago, and deciding to get rid of the scale, which had accumulated under the regime of his predecessor, he put a whole barrel full of black oil into the boiler. The result was that the Ranney's furnaces 'came down' in corrugations that would make a Continental furnace jealous. My owner came into the engine room the other day and among other things he asked was for me to trace the water from the sea-cock to the condenser discharge, and next time I'll tell you how I did it."

E. N. GINEER.

CHICAGO LAKE INTERESTS.

WESTERN OFFICE, MARINE REVIEW.
No. 210 So. Water Street, CHICAGO, Ill., July 30.

Every indication now points to a boom in lake freights, such as has not been seen for some years, before this month is a week old. Chicago shippers have sold an enormous quantity of wheat, said to include nearly all the heavy receipts in the latter half of July, for shipment during the first half of August, without contracting for their lake freight. They have now to get the boats and boats are not as plentiful as they were a month ago. Chicago board of trade men may be very smart in their way, but they do not generally watch the course of things very closely except those right under their nose. Because vesselmen had been chasing them all this spring and begging them to take boats, they have not comprehended that the time was close at hand when they would have to do the begging. But it is. Vessel room must be found for the wheat these shippers have sold, and if they do not bid up to 3 and 4 cents a bushel before they attract boats here from the ore trade, some one will be very much mistaken. When it is considered that wheat has been pouring into Chicago at the rate of 800 and 1,000 cars per day, and that there is ample freight demand to take it all, it will be seen that there are good grounds for the bullish views now entertained by many Chicago vesselmen. With wheat at 4 cents a bushel, the memory of a 1-cent rate that prevailed so long early in the season will seem like a bad dream.

If one is figuring on speed only, is it better to have a boat on an even keel or to have her out, say a foot, by the head? This is a question on which the views of Cleveland marine men, who are reputed to know as much about shipbuilding as anybody, might be interesting. The Goodrich people are running the Virginia something like a foot out of water forward, and are getting most excellent results, but it is the general opinion among marine men here that if she were trimmed to an even keel it would be still better. It is understood that the City of Milwaukee and the City of Chicago are both anxious for a brush with the Virginia, and it would not be surprising if a great steamboat race, with a good deal of money at stake, was arranged at an early date. Such an event would be a historical one, and if it comes off it will be more exciting than any horse race, even the Derby. It is certain that J. H. Graham, president of the Graham & Morton Transportation Company, professes a desire to put up a big sum on the City of Chicago against the Virginia in a smooth sea. It is all a good-natured rivalry, but nevertheless several people are very much in earnest about the comparative speed of steamboats on Lake Michigan.

The barge Michigan which was broke in two while at a coal dock in Chicago Monday morning, was an old Canadian ferry boat at one time and was not a strong craft but the accident is one of the things captains of all long wooden vessels have feared. The Michigan has three steel arches on her sides. The middle one on one side was broken in two and on the other side it was pulled down, her planking was pulled apart and she became as crooked as a rail fence. Who will bear the loss is a question. The captain had warned the coal dock men that by unloading her amidship and leaving the coal at both ends they were endangering the safety of his boat, but whether that renders O. S. Richardson liable or not is in doubt. The insurance companies may hold that they took no risk against any such mishap, and that they are therefore not liable. It is certainly a warning to all captains to see that their orders are regarded by coal unloaders, and to stop work altogether when their vessel is placed in jeopardy.

Grain freights may boom and ore rates advance, but the gloom seldom is lifted from the lumber market. The rate from Ashland has steadily improved, to be sure, but from the point where most of the small Chicago schooners trade, it seems a hopeless case. Frank Higgin says that he is surprised every day when he finds that he has chartered a number of boats, after talking with the shippers. These shippers are worse bears on freights than any that can be found around their mills, and nothing better than the donation of a freight list will suit them. But before this season is over there is a strong likelihood that they will pay more than starvation rates for having their lumber brought to market.

The Chicago papers are devoting some attention to the improvement of Chicago river, all the result of the Saranac excursion. Congressman McGann has declared himself a champion of the marine interests, and says he is going to do all it is possible in Washington in its behalf. In fact, the marine interest in Chicago has now a dozen friends to where it had one a year ago, because the marine men themselves took a determined stand and began to do something in a way of educating public sentiment.

It is a pleasure to see Capt. Williams bring the big steamer Harlem down the river. He handles her as if she were a steam yacht, and she goes along with a rapidity that seems fairly astonishing.

The steamer Soo City, which was placed on the Chicago and Mackinac run this season, is making a great record as a business boat. W. R. Owen said the other day that she is making 1,800 miles a week in the two trips between Chicago and Mackinac island, and of the seven days she spends

72 hours in port. In other words, she is being driven for all there is in her, and is showing up finely. While running in the Northern Michigan Line with the City of Charlevoix and Lawrence, she is not really in the line but is handled on a commission.

Capt. Allan McIntyre, who sailed the Lake Superior steamer Peerless for many seasons and then became superintendent of the Lake Superior Line fleet, is now in the city spending a week among his old friends. Several years ago Capt. McIntyre became interested in a mining and lumbering company operating in Sonora, Old Mexico, and last spring it became necessary for him to become its general manager. He looks none the worse for his life among the "Greasers," but says it seems good to be back around Chicago river again.

Wheeler Builds His Own Engines.

Special Correspondence to the MARINE REVIEW.

WEST BAY CITY, Mich., July 30.—L. M. Sanders of Detroit has been here the past week experimenting at Wheeler & Co.'s yard with a new steering gear on which Wheeler & Co. have secured an option for the exclusive control. It is intended to put it into the Yu Lu if it meets the expectation of the inventor. Wheeler & Co. did all the machine work on the engine for the Yu Lu, receiving the castings from Detroit. They will also do similar work on the engines for the government light ships.

The practice of blocking up the mouth of the river with rafts or logs from the upper peninsula and Canada is a great nuisance to local vessel men and one which has caused them many hours of vexatious delays. Two years ago this was stopped almost entirely by strict orders from the customs authorities, but the raft owners and tug men are becoming careless again and several complaints have been made against them by the owners of passenger and freight vessels. If some of the well protected vessels were run into a raft some of these days there would be a change of procedure on the part of tug men.

When the Colgate Hoyt was damaged a short time ago an attempt was made to induce the owners to send her to this port for repairs. Wheeler & Co. offered to do the iron work, if they would dock the vessel at the Bay City dry dock, but the owners evidently thought they would not try the experiment. There seems to be no reason why such work could not be done at this point and save the large vessels which meet with mishaps on the upper lakes the expense of towing to lower lake ports before being repaired. Last week the steamer Langell ran hard aground on the bar at the mouth of the river and was obliged to lighten a portion of her cargo before she could be got off. This same bar caused considerable trouble at the opening of the season, and the first work done was to remove it. The contractors are still at work near the mouth of the river, but the vessel men claim that they are working where the water is deep enough to answer all purposes and are making vigorous protests against deepening a channel where the water is already deep enough and at the same time leaving the bar to obstruct navigation.

The steamer W. R. Burt, which was built at Saginaw in 1877 and has been in the passenger and excursion business on the river ever since that time, has been taken to Erie, and will run in the excursion business from that port to Massasauga Point. The schooner Golden Fleece will be brought to this city by the tug Sea Gull and repaired at the Bay City dry dock. At the Garlano railway there is a considerable amount of repair work being done. The tug C. W. Wells has been overhauled, the yacht Hector replanked, and a rebuild of the A. W. Burtch will be completed in about ten days.

Value of Independent Condensers.

Although independent condensers are now a part of the latest equipment of a number of the best steel and wooden steamers on the lakes, there are some able engineers who do not take favorably to them. A comparison presented here will, however, prove interesting and may open the way to some discussion of the subject. The steel steamships E. P. Wilbur and Saranac, of the Lehigh Valley Line, are duplicates in every respect with the exception that the Saranac is provided with a Worthington independent condenser. In making the trip to Chicago the Wilbur took 30,000 turns more than the Saranac and .14 of a pound more of coal per turn than the Saranac. At 72 revolutions per minute the saving in favor of the Saranac would be about ten pounds of coal per minute, not charging the Wilbur with the extra turns. Following is the comparison derived from tests made on the two boats:

Steamer Saranac trip of August 8, 1890.	Independent air pump.
Miles run	1,830.
Coal used, tons.....	197.
Total revolutions.....	645,834.
Coal per revolution, lbs.....	.61
Steamer E. P. Wilbur, trip of May 11, 1890.	Connected air pump.
Miles run.....	1,830.
Coal used, tons.....	250.
Total revolutions.....	677,080.
Coal per revolution, lbs.....	.74

Wheat Crop of the Northwest.

Special Correspondence to the MARINE REVIEW.

DULUTH, MINN., July 30.—Wheat shipments were fair last week in spite of the low stocks here and the strong ore rates. There were 325,340 bushels sent to Buffalo and 67,000 to Kingston. Half the former went by the Northern and transit boats. Today there were only 902,000 bushels of wheat, to 3,000 bushels of oats and 17,000 of flaxseed in store. Receipts are very light and will be so until the new crop materializes. At present nearly everything coming in is going to mills. Rates ruled at 2½ cents and are still at that to Buffalo and also to Kingston. Some wheat was taken by liners last week at 2¼ cents. Flour shipments are small.

The prospects for the new crop continue excellent, and unless frost or rust comes in the next two weeks, the northwest will produce its biggest crop and Duluth will have more wheat for shipment than ever before. Weather is still cool and the grain is ripening very slowly, but this only insures a fuller berry and a larger yield. It is believed that cutting can begin in the Red river valley about August 15. If, as thought, the yield is so large our market will surely get 25,000,000 and probably 30,000,000 bushels on the crop. Six or seven million bushels will be needed for the mills here. Last year, owing to the short crop of winter wheat, about 12,000,000 bushels went to Minneapolis to supply interior winter wheat mills. This year that trade will be cut off and so Duluth will get more wheat on that account, to say nothing about the extra yield. Our prices for September are 2 cents above Minneapolis and if this continues this market will secure the bulk of the early movement.

More Talk of a Canadian Pacific Line.

Special Correspondence to the MARINE REVIEW.

KINGSTON, Ont., July 27.—Last week a distinguished party of representative railroad and steamboat men were in the city. They visited the Thousand Islands and the result of their visit will perhaps bring an innovation in the transportation of tourists from Thousand Island points down the river to Montreal and Quebec. The party consisted of Hon. Roswell P. Flower of New York, R. B. Angus, president of the bank of Montreal, Mr. Van Horne, president of the Canadian Pacific Railroad and other directors of the Canadian Pacific Railway. After cruising around the islands an informal conference was held at the Crossman house. What business was transacted is not definitely known but it is generally understood that the proposition to put a new line of steamers to run from Toronto to Montreal and in connection with the Canadian Pacific Railroad was discussed. For some time past it has been observed that the steamers of the Richelieu & Ontario Navigation Company were not capable of accommodating the crowds of tourists from the west, who wish to make the run down the river and through the rapids during the summer months, and this fact, together with the connections which would be gained from such a line of boats by the Canadian Pacific Railroad has doubtless caused the parties who were at Alexandria bay last week to discuss the scheme. If the promoters of the undertaking determine to go on with the scheme no doubt a fine fleet of steamers will be built. The Watertown Times has the following to say in connection with the above: "It is probable that an American line of boats will be put on the route between Toronto and Montreal, but that a new Canadian line is being considered is not to be doubted. Undoubtedly R. P. Flower and his party of prominent men of Canada talked of a new line while on the river. The Canadian Pacific seems for some purpose to greatly desire a line of freight and passenger boats from Duluth to run in connection with the railroad. There is money in it and there is money in a new Canadian line between Toronto and Montreal. Owing to the fact that American boats on the upper St. Lawrence must run, if they run at all, as feeders for the Canadian boats at Montreal, there would probably be not nearly as much profit in an American line as in a Canadian line. Therefore, a new Canadian line is being talked of, if anything at all was seriously discussed by Mr. Flower and his party. But there seems to be considerable foundation for the talk about a line of freight boats from Duluth to the Canadian sea-board or mouth of the St. Lawrence."

The pontoons of the Collinsby Rafting Company have left for Georgian Bay to raise the steamer City of Owen Sound. The tug Emma Munson had them in charge.

Vessel owners complain of the delay experienced by vessels in the coal trade loading at Charlotte. One schooner was delayed four days waiting for a chance to take on her cargo recently. Better shipping facilities than this are required.

F. D. Fox of Cape Vincent has purchased of Joseph Bork, Buffalo, the steamer Little Mack for \$6,500. She is one of the fastest boats on the river.

The dry dock contractors are now ready to proceed with the work of cleaning away the dam at the entrance, but as the iron gate is not yet completed a further delay will ensue.

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Stop on Cross Signals.

The decision of Judge Jenkins of Milwaukee in the famous Armour-Marion collision case is further proof of the determination of the United States judges to enforce the rule that steamboat masters must check their boats and if necessary stop and back them in case of cross signals. His ruling that the Armour, which was sunk, should bear half of the damages, was based entirely on the conclusion that the captain of the Armour was in fault in not doing something to reverse his engine in the face of cross signals. The collision occurred in September, 1889. The Armour was bound down and the Marion bound up, and the boats met at south-east bend in the St. Clair river. The Armour was struck on her starboard bow and, after swinging around, sunk in 72 feet of water. The judge gave it as his opinion that the Armour was running at ten mile an hour, to which was added two miles for the current, while the Marion was running at eight miles an hour. The main theory of the Marion that the Armour put her helm hard to starboard just before the collision, the judge finds to be not according to the facts, and he decides that it was hard-to-port. He states that he finds it difficult to understand under the given facts how the collision could have occurred, but he concludes that the collision occurred on the American side, but that the Armour was farther out in the channel than was claimed for her. He holds that the Marion, having mistaken the blasts of the steamer Mt. Clemens for those of the Armour, was moving under a starboard helm, intending to pass the Armour to starboard. When half a mile apart the vessels understood each other's signals, he thinks, and the Marion ported intending to pass port to port. The Armour was standing out into the stream, and the Marion coming up struck her on the starboard bow. He thinks the Armour intended to follow the rule to pass port to port. The Marion had undertaken to go contrary to the rule, under the mistaken impression that the signal of the Mt. Clemens came from the Armour.

Assurance of Good Fall Rates

Ore rates are again advanced to \$1.10 from Ashland, \$1.05 from Marquette and 85 cents from Escanaba with indications of still higher figures before the week is out. There is now no doubt of good rates of freight for vessel property in all lines from this time to the close of navigation and no better proof is needed than the action of northwestern shippers of grain who have been offering for three days past 4 cents a bushel for tonnage to Buffalo during October and November. But even this rate, equal to \$1.49 a ton on ore from the head of Lake Superior, has been accepted in only a few cases by Cleveland and Buffalo vessel owners. Chicago, too, will pay a big advance on grain next month, and the ore rates have been advanced with little difficulty on account of this evidence of a demand for boats to handle the grain crop.

But it is not the grain alone that has brought about the general improvement in freights. Sales of ore for this season's delivery have been underestimated. There is now no doubt that these sales, including about 1,000,000 tons on dock when navigation opened, aggregate about 6,000,000 tons instead of 4,500,000 tons as generally reported, and little more than 2,000,000 tons of this ore has been brought down to date. The ore companies are not selling more ore at advanced prices that might be secured for the reason that they have already sold about as much as can possibly be brought down. The Chapin mine, for instance, which was said to have sold very little ore, could not today take an order for more than 8,000 or 10,000 tons at the outside with any assurance of delivering it. The output of this mine, as well as a few other big properties in the Lake Superior region, will, of course, be cut down in comparison with last year but the shrinkage in this regard has been more than offset by the loss in time early in the season.

Coal is somewhat more plentiful than it has been, but the heavy demand for cars in the movement of ore toward the furnaces is acting against coal receipts. In Cleveland the Nypano ore docks are shipping at the rate of 500 cars a day and about 150 cars a day are going out from the Cleveland & Pittsburgh docks. Boats are going up light on the advanced rates and less attention is given to the prospects in coal. Coal rates are 45 cents to the head of Lake Superior, 55 cents to Portage, and 50 cents to Marquette, Milwaukee, Manitowoc, Green Bay and Chicago. To Racine and Sheboygan 65 cents might be secured.

Record of Speed and Big Cargoes.

[Masters or owners are invited to report improvement on this list.]

Iron ore: Lake Michigan—Maryland, Inter-Ocean Transportation Company, of Milwaukee, 3,322 gross, or 3,737 net tons, Escanaba to South Chicago, draft 16 feet 6 inches; E. C. Pope, Dry Dock Navigation Company of Detroit, 3,221 gross, or 3,608 net tons, Escanaba to Ashtabula, draft about 16 feet. Lake Superior—E. C. Pope, Dry Dock Navigation Company, of Detroit, 2,745 gross, or 3,104 net tons, Ashland to Lake Erie, draft 14 feet 5 inches.

Grain: W. H. Gilcher, J. C. Gilchrist, of Cleveland, 114,982 bushels of corn, Chicago to Buffalo; America, M. M. Drake, of Buffalo, 111,507 bushels of corn, Chicago to Buffalo.

Speed: Owego, Union Line, of Buffalo, Buffalo to Chicago, 889 miles, 54 hours and 16 minutes, 16.4 miles an hour; Saranac, Lehigh Valley Line, of Buffalo, Buffalo to Lime-Kilns, 240 miles, 15 hours and 10 minutes, 16 miles an hour.

Iron Mining.

VALUE OF LEADING STOCKS.

Quoted by Chas. H. Potter & Co., No. 104 Superior St.

Stocks.	Par Value.	Bid.	Asked.
Cleveland-Cliffs Iron Company.....	\$100 00	\$.....	\$ 80 00
Champion Iron Company.....	25 00	.....	87 50
Chandler Iron Company.....	25 00	37 00	39 00
Chicago and Minnesota Ore Company.....	100 00	.....	100 00
Jackson Iron Company.....	25 00	90 00	100 00
Lake Superior Iron Company.....	25 00	52 50	55 00
Minnesota Iron Company.....	100 00	72 50	73 00
Pittsburg Lake Angeline Iron Co.....	25 00	.....	140 00
Republic Iron Company.....	25 00	.....	.....
Ashland .....	.....	.....	52 50

On August 1, a year ago, there had been shipped from all Lake Superior mines 4,033,595 tons of ore. Shipments this year are a little more than 2,000,000 tons but the exact figures can not be secured from all ports. Ashland had shipped 474,169 tons on July 22 and the movement from Two Harbors aggregated 320,399 tons.

On August 1st the Metropolitan Iron and Land Company, owning the big Norrie mine, will pay a dividend of \$1.25 per share of \$25. It is capitalized at \$2,500,000. The dividend is a small one for the Norrie to pay, and it has been delayed somewhat, but neither fact is due to any reaction in the mine's earning capacity. At the annual meeting early in the present year the company had a surplus of more than \$1,000,000. At that time it was expected that the company, which the year before had paid a cash dividend of \$8.25 per share, besides a stock dividend of 25 per cent., would break the dividend-paying record, it having produced about 1,000,000 tons of ore during 1890, and sold it at very good prices. However, it was decided at the annual meeting to hold the surplus in reserve for awhile, instead of at once expending most of it on dividends. The reason for this action was slow payments from furnace men. The Metropolitan, like other mining companies, had this experience with its customers, and hence the determination to reserve its capital until the money market became easy again. It is quite certain that the dividend of \$1.25 per share payable on August 1st is not the only one that the Norrie will yield this year. Several other small dividends, it is said, will be declared in the near future. The stockholders are wealthy men, almost without exception, and do not seem to be in a hurry for their dividends. The mine's product this year will not be as heavy as that of 1890, but the difference will not be as great as in other big properties.

Ten pits sunk recently on the property of the Crystal Falls mining company and covering a length of 180 feet are bottomed in ore. One pit is ten feet in the ore and will be lowered to a depth of forty or fifty feet, when the vein will be cross-cut. The ore is in the same formation as the mine proper, and is apparently of the same character, a brown hematite. The trend of the formation is identical with the old workings, being southeast and northwest. The find is regarded as a continuation of the mine, though at present having every indication of being on a much larger scale. Operations at the mine proper have been greatly curtailed that all energy may be put to use on the new find.

The Chapin Company will not produce more than 450,000 to 500,000 tons of ore this season although the mine's output last season was about 750,000 tons. Last year's output might have been largely increased but the policy to be pursued in connection with this property has been changed by the new owners. They refuse to make heavy sales on a low market. It can be said to a certainty, however, that all but probably 8,000 or 10,000 of this

season's output has been sold, notwithstanding rumors to the contrary. President Hanna and Mr. Kent, vice-president, secretary and treasurer, have been at the mine recently and are giving personal attention to its affairs.

Surveys have been made at Menominee, and the citizens of the town have purchased land to offer to the Chicago, Milwaukee & St. Paul Railway Company for the building of ore docks. The St. Paul now owns and operates the Milwaukee & Northern line, which has a branch to Menominee, its main line tapping both the Menominee and Marquette iron ranges, and may be seeking an outlet at Menominee for the ore business in competition with the Northwestern, but the officials of the road have not as yet given out any definite information regarding their intentions.

Manganese discovered near the Mastodon mine, Crystal Falls district, is said to be sufficient in quantity to warrant working it separately from the iron ore that accompanies it. About 1,000 tons of the ore has been taken out and it is expected from analyses already made to show 40 per cent. manganese.

At the Norrie, Ashland. Section Thirty-three, Iron Belt, Montreal, and in fact all of the Gogebic range mines working forces have been increased within the past few weeks. The Montreal has about 300 men at work, and it is now thought that the Norrie will crowd last season's output.

The Ludington mine containing one of the best grades of ore found in the Lake Superior district is employing about 600 men and the miners are being worked on 8-hour shifts in order to get out all the ore that can possibly be produced. Shipments are made from Gladstone.

At the Pewabic mine about 27,000 tons has been shipped, and there is still 9,000 or 10,000 tons in stock, with a daily output of about 225 tons. The future of the mine as regards the quantity of ore expected remains in doubt.

The Norway and Cyclops mines, Menominee range, have stock piles aggregating about 20,000 tons, and are producing about 120 tons a day. The Millie of the same range is sending out about 100 tons a day.

Pioneers in Lake Superior Ore Production.

Jacob Reese of Pittsburgh, writing in the bulletin of the American Iron and Steel Association of his early connection with the furnace interests of the central west, refers also to Cleveland men who were pioneers in the production of Lake Superior ore and of whom some of the owners of lake vessel property bear pleasant recollections.

"In 1855, while strolling along the dock in Cleveland," says Mr. Reese, "I saw a large pile of ore which I soon concluded was Lake Superior iron ore, although it looked somewhat different from the Jackson ore. While I was sitting on a big lump of ore on top of the pile examining its structure a very fine looking gentleman came crawling up the pile, and when near me said, 'How do you do sir?' I replied, 'I am happy,' and after talking awhile he informed me that his name was W. J. Gordon, president of the Cleveland Iron Mining Company, who owned the pile of ore that I was sitting on. He informed me that that was their first cargo. I bought it, shipped it to Pittsburgh and sold it to the mills for lining the puddling furnaces. I had to do with the introduction of Lake Superior iron ore, both as pig and in blast furnace use. From that day on, both personally and associated with others, I have bought many thousand tons of Lake Superior iron ore. Mr. Samuel Mather was treasurer and Mr. H. B. Tuttle was secretary of the Cleveland Iron Mining Company. My dealings with these gentlemen were always of the most pleasant nature and in all my intercourse with men I have never met a gentleman of finer sensibilities or purer manners than marked the business life of the first president of the Cleveland Iron Mining Company."

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MARINE REVIEW.

DEVOTED TO THE LAKE MARINE AND KINDRED INTERESTS.

JOHN M. MULROONEY, ... } PROPRIETORS.
F. M. BARTON, ... }

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post paid, 75 cents. Advertising rates on application.

The books of the United States treasury department contain the names of 3,510 vessels, measuring 1,063,063.90 tons in the lake trade. In classification of this fleet the lakes have more steamboats of 1,000 to 2,500 tons than the combined ownership of this class of vessels in all other sections of the country. The classification is as follows:

Class.	Number.	Tonnage.
Steam vessels	1,527	652,922.25
Sailing vessels.....	1,272	328,655.96
Canal boats.....	657	67,574.90
Barges.....	54	13,910.09
Total.....	3,510	1,063,063.90

According to the report of William W. Bates, United States commissioner of navigation, 46 per cent of the new tonnage of the country was built on the lakes during 1889. This is a percentage greater than the work of the Atlantic coast and western rivers combined, and almost equal to the whole work on the Atlantic and Pacific coast. In 1890 the tonnage built on the lakes is but very little less than that built on the Atlantic and Gulf coasts. Tonnage built on the lakes during the past five years was as follows:

	No. of boats.	Net Tonnage.
1886.....	85	20,400.54
1887.....	152	56,488.32
1888.....	222	101,102.87
1889.....	225	107,080.30
1890.....	218	108,515.00
Total.....	902	393,597.03

St. Mary's Falls and Suez canal traffic: Number of boats through St. Mary's Falls canal in 1890, 234 days of navigation, 10,557; tonnage, net registered, 8,454,435. Number of boats through Suez canal during 1890, full year, 3,389; tonnage, net registered, 6,890,014.

Tonnage passing through Detroit river during 234 days of navigation in 1889, amounted to 36,203,606 tons. Ten million tons more than the entries and clearances of all the seaports in the United States, and three million tons more than the combined foreign and coastwise shipping of Liverpool and London.

Entered at Cleveland Post Office as Second-class Mail Matter.

THERE is no doubt that the vessel owners of the lakes are growing restive under the slow progress of improvement in the St. Mary's Falls canal and other connecting waterways of the lakes. Collisions and accidents of all kinds are occurring. Here are some of the expressions that are heard in different quarters:

Why is not the St. Mary's Falls canal deepened at once 20 feet in accordance with the plans for an entire channel of that depth. This work should not wait until the new lock is finished. There is great delay to navigation now on this account and boats are being injured and the bottoms worn off by the shoal water in the canal. All interests will agree that it would be better to have this work done before the canal is completed.

Why not deepen the canal at once? Can it not be deepened in one winter by putting a dam across the upper end of it, thus preventing the vessels from being injured and ruined as they are now by dragging over the bottom?

Why is not the "hole in the wall" in the vicinity of the Sailors' Encampment improved and deepened. This will be the permanent channel, and there is no reason why its improvement, needed at this time, should be delayed. Thirty-five years ago the Sault Ste. Marie canal with two locks was built in twenty-three months, and was then the finest canal in existence. Why has not the same energy been shown in building the lock now under construction and in making the improvements in the Sault river? If different parts had been let to different contractors could not the improvements have been made at the same time?

Have not the engineers and contractors of the country improved in doing such work during the past thirty years?

Why not improve the Sault river in such a manner that boats can run night and day? There is but about 213 days during the regular season of navigation, and deducting nights there is left but 125 days of 24 hours each in which to handle the great Lake Superior business that passes through the Sault river and it is increasing about 25 per cent. each year.

Why not widen all the narrow channels, so that in case a boat should be sunk by collision, getting across the channel, navigation will not be blocked for want of room to pass the sunken vessel. What provision is made for removing wrecks from narrow channels in case the owners and insurance agents fail to agree? It is not understood that the government can step in at once on such an occasion. Must navigation be blocked thirty or sixty days on this account?

In November 1872 and July 1876 a storm or tidal wave swept over the canal and the water went over the locks and banks like a great rushing river. The shipping interests of the lake would be in sorry plight should such an event occur now. Would not such an accident damage the canal so that it would be closed and business of the northwest tied up for months? Several times each year boats have almost run through the gates. What provision is made for repairs and replacing the gates? Such an accident is liable to occur any day.

Most lake steamers are built so they can load from 2 to 4 feet deeper than they now load, which means that they are carrying only one-half to two-thirds of their load. If these improvements had been hurried through ere this, as it seems they could have been, it would make a great difference to the people of the northwest and whole country.

The amount of tonnage passing through the canal is increasing, and before the canal and improvements are completed the Lake Superior business will have reached 20,000,000 tons. To move 20,000,000 tons in 125 days of 24 hours each would require an average of 7,000 tons per hour through the canal and river, or a boat of 1,000 tons passing every 8½ minutes. Boats must move slower in shallow water and narrow channels, however, and it will thus be seen that these waterways must soon bear a steady stream of ships.

IT DOES not speak well for the policy of the Dominion government regarding its shipping, dry docks, etc., that in all Canada there was not a place where the Canadian Pacific steamer Athabaska, which collided with the Cleveland steamer Pontiac, could be repaired. She had to seek repairs in Detroit, and it is remarked in this connection that the Canadian government will not neglect to collect full duties on the amount of money paid the American builders for fixing up the boat. It should not be so, however, any more than the present unjust relations between the two governments regarding wrecking matters should exist.

TIN plate imported and consumed in this country last year, and upon which a big margin of profit was paid to English capitalists, represented in its manufacture about 1,000,000 tons of ore. Fully one-half, or 500,000 tons of this ore, would have been produced in the Lake Superior region had this tin plate been made in America. Evidently the tariff on tin plate will have a bearing on the business of producing and carrying ore in this part of the country.

A GREAT deal is being said of the ocean voyage of the Leary raft, which arrived in New York from St. Johns a few days ago, but the movement of timber and logs in much larger quantities is a common occurrence on the lakes. A raft of logs for F. E. Bradley & Co. of Bay City just taken down from Lake Superior contained 6,000,000 feet and was valued at \$75,000. The Leary raft contained but 3,500,000 feet of lumber and was valued at not more than \$50,000.

Around the Lakes.

The Hart line of steamers running on Lake Michigan now carry penants of blood red with two hearts of pure white stitched thereon.

Water in the Sault canal and in the Detroit and St Clair rivers at last show a tendency toward improvement. Lake Superior boats can now load to 14 feet 4 inches.

The Minnesota company's steamship Marina spent a few hours on a sand bank at Two Harbors, on her last trip. She was bound to Two Harbors for ore and went on light in a fog.

Three light-ships for Simmon's reef, Gray's reef and White shoal in the Straits will all be launched from the yard of the Craig Ship Building Company, Toledo, before the close of the present week.

The Goodrich line steamer Virginia is said to be carrying 400 to 500 passengers on her regular runs. The owners will undoubtedly gain many times over in the popularity of the boat all that was spent on her in elegance.

On Monday morning Buffalo had a fleet of vessels bearing 1,680,000 bushels of grain. Every one of the vessels making up this enormous tonnage would have been unloaded within 36 hours but for some delay caused by breaks in the Erie canal.

H. G. Trout & Co. of Buffalo recently overhauled the the big pump that was released from the wreck of the propeller Calumet, which went down near Chicago in the fall of 1888. The pump is of the Silsby make, rotary pattern and throws a 12-inch stream.

It seems to be settled now that the damage to the whale-back steamer Thompson's boilers was caused by getting oil into them. This allowed the great heat to warp the plates over the fire box. The builders of the boilers in such a case would not be responsible for the loss.—Buffalo Courier.

In 6 days, 2 hours and 31 minutes the Minnesota Steamship Company's steamer Maruba loaded and discharged 2,115 tons of ore and made the trip from Two Harbors to Ashtabula and return, 1,778 miles. These boats are certainly leaders in the Lake Superior trade. Their time of loading is seldom more than two to four hours.

Wolf & Davidson, ship builders and dry dock owners of Milwaukee, have had trouble for some time past with the Ship Carpenters' and Calkers' Union. Last week twenty-five men were taken to Milwaukee from Bay City, where work in the shipyard line was not very active, and they have so far been kept to work in the Milwaukee yard.

Isaac Bearinger, the lumber merchant of Saginaw who had the yacht Straightway constructed from an iron hull that had lain idle in Detroit for a number of years, calls his craft a "choring boat." She is a good yacht, however, and he has not spared money in making her comfortable. She is at Saginaw taking on furniture and will be given a Roberts water tube boiler.

John Kelderhouse and others, owners of the schooner Sage, released from the beach at Hammond's bay and now at Buffalo, figure that they will have a 1,500-ton vessel for about \$12,000. Only \$400 was paid for the boat and cargo and the wrecker, McMorran of Port Huron, was given \$3,500 and the cargo for releasing her. The cost of rebuilding her, it is thought, will not be more than \$8,000.

Vessel masters taking coal to Heron bay near Port Arthur, or any other place where there is no customs house, will do well to report their arrival and departure at the nearest port where customs officials can be found. Capt. La Rush of the Canadian schooner Valencia neglected this important duty and was fined later by the Duluth collector of customs, to whom he could present no clearance papers on arriving from the Canadian port.

The libel on which the owners of the steamer Pontiac will proceed against the Canadian Pacific steamer Athabasca is said to claim that, while coming up the channel of the St. Mary's river, near Nelson's bend, the Athabasca was at about the stakes in Lake George. The Pontiac blew one whistle, and was answered with one by the Athabasca. As the two boats approached each other the Athabasca suddenly blew two blasts of her whistle and started to go to starboard. This the Pontiac answered with one short blast and reversed her engines. Seeing that a collision was unavoidable, the captain called to his wheelman to steady her. The Athabasca's side of the case, which will be told in the cross libel is, of course, different.

Death of Capt. John Nelson.

Capt. John Nelson, who died at his home, No. 84 Marion street, Cleveland, on Sunday the 26th inst., was very favorably known among lake masters and vessel owners. In his death, which was not expected, the marine fraternity recognizes a great loss, as he had been in the front rank with those who have advocated the advancement of lake masters through the Excelsior Marine Benevolent Association, an organization that has accomplished a great deal in this direction within a very short period. He was also a leader in matters pertaining to government improvements of lake channels and other aids to navigation, and had several times been selected as a representative before congressional committees, as well as the practical advisor of United States court judges in admiralty cases. A few weeks previous to his death he was compelled to leave his steamer, the J. H. Outhwaite, in which he was part owner with Capt. W. C. Richardson and others, at Milwaukee on account of a return of sickness contracted last winter through a severe cold. Stomach troubles followed and, although a man of strong constitution, and unusual activity at fifty-seven years of age, his friends immediately gave up all hopes of his return to the lake service.



Capt. Nelson's initial training as a navigator was obtained in the Baltic sea trade. He was born August 3, 1854, in Hesse-Hamburg, Sweden, and went to sea on a Swedish merchant vessel at thirteen years of age. In 1854 he came to this country and began work on the lakes one year later. His first command was the schooner R. G. Winslow. He was later in the schooner Orphan Boy, and brought out the schooner I. N. Foster and S. H. Foster, superintending the construction of these boats as well as the steamer J. H. Outhwaite in 1886, which he sailed up to the time of his illness. Capt. Nelson was a man of true christian disposition, showing at all times great kindness of heart. He had as much regard for the feelings of a deck hand as he had for the officer next to him in rank on his steamboat. Captains James Stone and W. H. Collier represented the E. M. B. A. as bearers at the funeral.

The yacht building for Mr. J. H. Wade will not leave the yard of the Cleveland Ship Building Company before October 1. Capt. Dayton, who has commanded some of the most costly and fastest yachts in the east, arrived in Cleveland this week. Chief Engineer Smith has been at the yard for some time. The manganese bronze wheel will be put on this week and most of the auxiliary engines are already placed in the yacht. She will cross directly from Halifax to the Mediterranean, as has been stated in the REVIEW. Commenting on the hull Capt. Dayton says the lines are the most satisfactory he has seen in all his service and that the speed results cannot fail to meet expectations.

The MARINE REVIEW and the MARINE ENGINEER, London, one year for \$4. Write the MARINE REVIEW.

Another Mining Consolidation—Stocks and Dividends.

Announcement has just been made of another big deal among Lake Superior mining companies that throws some light on the policy of the management of the Vermillion range mining properties of late through which big surpluses have been accumulating. The Chicago and Minnesota Ore Company owns 27,300 acres of mineral land on the Vermillion range and in addition to this holds a control of the stock of the Chandler Mining Company, which has made a very large amount of money of late and has declared no dividends. It is now proposed to consolidate these big interests, through a purchase of the stock of the Chicago and Minnesota Ore Company by the Minnesota Iron Company. The plan is to give one and one-quarter shares of stock of the Minnesota Iron Company for one share of stock in the Chicago and Minnesota Ore Company. Capitalists controlling the Minnesota Iron Company are leading stockholders in both the Chicago and Minnesota Ore Company and the Chandler Iron Company and there is little doubt of the deal going through. The stock is held mainly in Chicago, New York and Cleveland. The scheme, which is about as broad as anything ever accomplished in the Lake Superior mining country, will give the Minnesota Iron Company absolute control of the shipping properties of Minnesota. Section 1 thirty-three, one of the Gogebic range mines that had its birth in the boom that attended that district a few years ago, can now be numbered among the dividend payers, having declared \$2 with a surplus of about \$100,000 still remaining in the treasury. This mine fell into good hands when Samuel Mitchell of Marquette and officials of the Cleveland Rolling Mill Company took hold of it.

The Republic Iron Company has declared another dividend of \$1 a share, payable August 3, although the stockholders who are not near the management have generally expressed fears regarding their investment during the past week, on account of fire in the mine. Officials of the company say they are unable as yet to give any information regarding the extent of damages but they express the opinion that the fire has not caused great loss. There is an unsettled feeling regarding the stock and this will probably continue until something definite is known regarding the loss from the fire.

Lime-Kiln Cut and St. Clair Canal.

A correspondent asks for information regarding the Lime-Kiln cut and the St. Clair canal. The Lime-Kiln cut, Detroit river, is 2,500 feet long, 440 feet wide and 20 feet deep. The St. Clair canal is 7,221 feet long and 300 feet wide and is now being dug to a uniform depth of 18½ feet, the work being half finished. The present appropriation will finish the canal work from pier to pier but does not provide for dredging the approaches.

The English Underwriters.

Just previous to Mr. Harvey D. Goulder's departure for Sault Ste. Marie, where he has been detained on account of two collisions in the Sault river, in which he was called upon to act as counsel for the libelants in both cases, Mr. M. A. Bradley had begun negotiations with Manager Gordon, of the Northern Steamship Company, for a settlement of the loss of the schooner Fayette Brown, sunk in Lake Erie a short time ago by the Northern Queen, one of the Northern line boats. The negotiations have been suspended since but it is probable that a settlement will be made out of court, as the Northern Queen, valued at \$200,000, was insured in the English Lloyds against collision liability, and the value of the Brown with her cargo and prospective earnings for the season would not foot up more than \$25,000.

Mr. Gordon represents the English underwriters in a great deal of their insurance business on the lakes and on this account a settlement may be more readily expected. It is understood that large lines of risks on package freight have been taken up

by the underwriters of Lloyds this season, and it would seem as though they will soon have the great bulk of the best part of the hull and cargo risks. They made rates in the spring through which they secured a high class of business, even in competition with the demoralized tariff of the general agents who have held the lake patronage for several years past.

Cleveland Matters.

A mistake in print last week referred to Mr. Wm. Barr, engineer of the steamship Emily P. Weed, as "Engineer Root."

The Cleveland Ship Building Company shipped a 12-foot sectional wheel to Buffalo this week for the steambarge City of Cleveland.

A 60-foot steel hull will be launched from the Cleveland yard shortly. It will be used for a fish tug for Ranney & Son. It is claimed that steel hulls will displace wooden hulls in the fish business just as they are doing in the heavy cargo trade.

Joseph R. Oldham will superintend for the government the construction of the light-house tender Amaranth, building at the yard of the Cleveland Ship Building Company for service in the two lake districts in charge of Col. William Ludlow of Detroit.

The new Lake Shore ore docks at Ashtabula will be of some assistance in relieving an overcrowded condition of Lake Erie docks this fall. It is more than probable that the new plant will receive some ore. Work is being hurried on the Brown hoists now going up on the docks. There will be three sets of three legs each, 250 feet in length and costing about \$100,000.

Capt. John Nelson, whose death is mentioned elsewhere, had promised some time ago to write an article for the REVIEW, giving experiences of his early days when sailing on the Baltic sea. Aids to navigation in those days were certainly primitive, the only fog signal consisting of a plank which was raised and let fall on the deck at short intervals. Dishes of oil with wicks hanging over the edge served as side lights.

When about 3 miles from Bar point light Lake Erie, bound up a few days ago, a small fire occurred on one of the schooners of the propeller Glidden's tow. The steamer was stopped and the schooner Warmington's tow line sagged to the bottom of the lake. On being hauled up again an anchor and several lengths of chain were found attached to the line. They were taken aboard the Warmington.

With the demand for steamboat masters of the first class on account of the large number of big steel ore carriers added to the fleet trading to Ohio ports during the past two years, the coarse freighters are getting many of the captains who reached the top rank in Buffalo line boats. Capt. William Cumming of the Corsica, Edward Mooney of the Wawataw, J. B. Hall of the Corona, James Walsh of the Grecian, W. H. Campau of the Emily P. Weed and Stephen Lyons of the Saxon were all in package freight carriers a few years ago. Salaries in the ore boats are \$100 to \$300 better than in the Buffalo boats.

Seven traveling cranes, each capable of picking up a stone weighing 10 tons and lowering it 43 feet will shortly be built in Cleveland for work on the new canal at Sault Ste. Marie. The quarries of Kelly's island near Sandusky are furnishing the stone for the masonry work now under contract which involves an expenditure of about \$1,500,000. On the Canadian side of the Detroit river, just above Amherstburg, stone of the best quality for this class of work is found. It is being used in the construction of the Canadian canal at the Sault but the heavy duty on it prevents its use on the American side.

Little is heard of the workings of search lights on lake steamers this season, although electric plants for general lighting purposes are now found on most of the big steel boats. The Fisher Electric Company of Detroit has alone placed about fifty plants on the better class of steamers within the past year, and this system has proved most satisfactory. Great improvement must be made in search lights, however, before they will come into general use. The propeller Progress has one of these lights made by an eastern company, and the fact that she had a collision in the Straits on the first trip after it was taken aboard has not assisted this plan of "penetrating fogs."

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Notices to Mariners.

Two red and black stakes mark another obstruction just found about midway between Bar point light-ship and the Detroit river light. It has been ascertained that deep laden vessels will find the best water in this locality, 17½ feet, by ranging the light-ship and the light structure, or the middle black buoy and the light structure. Capt. M. W. Gotham of the steamer Briton in coming down the river about ten days ago struck at this point, and Capt. George P. McKay of Cleveland went immediately to Amherstburg to go over the channel with Capt. Andrew Hackett of Bois Blanc island. Several courses were followed from the light-ship to the light, float buoys being dropped to guide the work of sounding, and a nest of boulders was found at the point now indicated by the red and black buoys. A tree branch has been fastened to the middle black buoy below the light-ship, to indicate that a course ranging that buoy with the Detroit river light will give deep water.

The light-house board gives notice that, on or about Aug. 15, the light at Portage river, Lake Superior, will be changed from a fixed white light, varied by a red flash every two minutes, to a fixed white light, varied by a red flash every minute.

A red barrel with a small tripod on top marks the wreck of the scow Hannah Moore, sunk on the middle ground off Black river, near Port Huron.

Wrecks and Heavy Losses.

The schooner Helena has been abandoned by Hanna & Co., as a total loss. She was coal-laden and up-bound when her steamer the Havana exchanged proper signals, with the Mariska in Little Mud lake. The suction from the Jay Gould, passing at the time, ported the schooner and she collided with the Mariska. Although the latter was under check the Helena was cut to the cat head and sunk in 20 feet of water. A sailor named Matti was drowned. The Helena was built by Quayle & Martin in 1874, was valued at \$30,000 and insured for \$25,000.

Steamer B. F. Ferris, plying between Tawas and Caseville burned at the latter place, fire breaking out in the boiler room. She was owned by Turner, of Saginaw, valued at \$8,000 and insured for \$5,000. The crew escaped with their lives but lost their clothes. The Ferris met with several accidents during her short career, having been sunk at Saginaw, two years ago.

The only other accident attended by heavy loss during the week was the stranding of the Buffalo steamer Empire State on Sable reef, Lake Superior. Her release was costly and she is badly damaged. The officers and crew of the boat had a very rough experience in effecting her release, on account of strong northwest wind prevailing for days and difficulties in obtaining assistance.

The Minch was released from above the Sault after ligtering 400 tons of cargo. Her damages are not serious. The schooner Nicholson in tow of the Emory Owen collided with the City of Berlin, one of the Big Four, carrying away the bulwarks, bridge, rail and stanchions of the latter. The Nicholson lost her head gear and jib-boom.

In General.

Announcement of the death of Capt. Saunders, who took the American whaleback steamer Wetmore across the Atlantic, comes from Liverpool, where the boat was about ready for her return trip to New York. He was a resident of Tacoma, Wash.

The members of the river and harbor committee of the House and the commerce committee of the Senate, who left Chicago for their homes a few days ago, spent more than two weeks on the lakes and visited every port of importance from Cleveland to Duluth. They were fittingly entertained and their visit will certainly result in advantages to the lake marine.

A full sized model of Nelson's H. M. S. Victory, is an exhibit at the English naval exposition, Chelsea, and the dimensions of the famous ship, launched at Chatham dock yard May 7th, 1765, are given here so that comparisons can be made with wooden-built ships of to-day: Length from figure head to taff-rail 226 feet, keel 151 feet, gun deck 186 feet, extreme beam 52 feet, depth of hold 21 feet and displacement 2,162 tons. She had five decks and what is known as a waist, her greatest fullness

being at the lower deck, diminishing above the quarter deck.—The Engineer, London.

Testimony with regard to signals will be of the highest importance in the Athabasca-Pontiac collision case. There is a bend in the Sault river at the point, where the collision occurred, but the officers of the Pontiac claim that after one signal had been exchanged, with the Pontiac nearing Wilson's dock and the Athabasca near the upper end of Little Lake George, three-quarters of a mile distant, they could see that the Athabasca was keeping the course she had signified she would pursue by the one blast of her whistle. Two blasts were then suddenly given by the Athabasca, is the claim of the Pontiac according to the libel, when it was too late to change the course.

Big Cargoes on Light Draft.

The steamship E. C. Pope's big cargo of 3,221 gross or 3,608 net tons of ore, taken from Gladstone to Ashtabula last week on a draft of about 16 feet, would indicate that she will carry, as the builders expected, 50 to 100 tons more than the steamship Maryland, which was made from the same model but has engines somewhat farther forward than the Pope. The Pope now holds the honor of having taken through the rivers the largest cargoes ever shipped from Lake Michigan or Lake Superior. Her draft from Lake Superior on the cargo of 2,745 gross or 3,104 net tons, carried some time ago, was 14 feet 5 inches.

From the Sudbury Mining District.

Mr. H. P. McIntosh of the Canadian Copper Company of Cleveland, says that his company has purchased about thirteen acres of land on the Valley Railway near Brooklyn station, one of the suburbs of Cleveland, and will immediately erect a copper-nickel alloy plant. It is understood that the construction of the works will be pushed.

About 240 cars of nickel matte is being shipped daily to the United States by one company from the Sudbury (Ont.) district. The nickel is for Carnegie, Phipps & Co., to be used in the manufacture of nickel steel by the Harvey process on their contract with the government.

Official Numbers and Tonnage.

The bureau of navigation, William W. Bates commissioner, assigned official numbers and tonnage to the following lake vessels during the week ending July 25: Steam—J. D. Marshall, Chicago, 531.99 tons gross, 428.24 net, No. 76,964; Lorain L., Grand Haven, 190.53 tons gross, 145.39 net, No. 141,155; Mary Mann, Duluth, 11.32 tons gross, 6.91 net, No. 92,346. Sail—Rover, Cleveland, 5.86 tons gross, 5.40 net, No. 110,934.

Lake Chautauqua—The Queen of Summer Resorts.

At a lake of cool crystal water, located among the beautiful highlands of the Empire state, over one hundred and fifty thousand people seek each summer season the delightful rest always found in that wholesome atmosphere. Chautauqua—the famous resort—located between fourteen and fifteen hundred feet above the ocean, has unsurpassed facilities for boating, fishing and bathing. When these pastimes are combined with the advantages made possible through the educational and religious organizations, which make Chautauqua lake their summer headquarters, is it surprising that each season, thousands frequent its shores.

With hotel accommodations capable of delighting the tastes of the most fastidious and boarding houses where families may secure commodious rooms and excellent service at reasonable rates, should it be wondered at that people flock from the smoke, dust and heat of our cities to enjoy the pleasures and benefits obtainable on the shores of this "Lake of Springs."

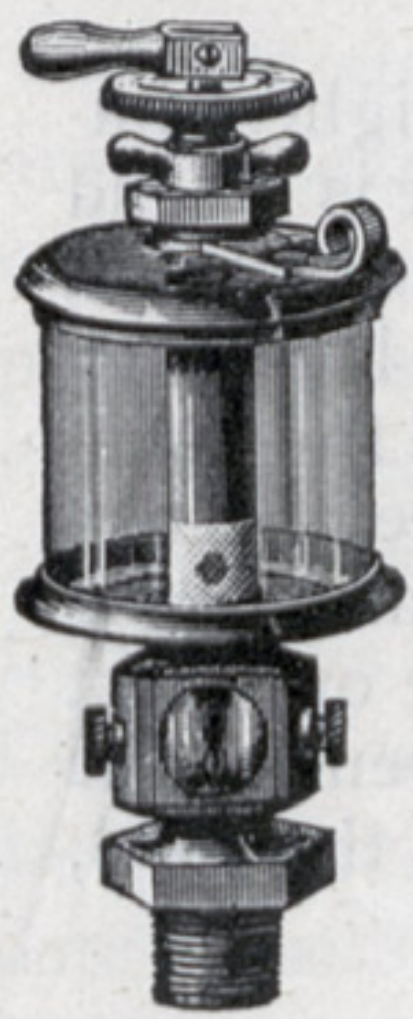
Tourists selecting the Nickel Plate route to this queen of summer resorts, will find accommodations desirable in every appointment. Excellent connection is made for Chautauqua lake at Brocton Junction, N.Y., and from Mayville, N.Y. any point on the lake may be reached via boat or rail. Passengers holding tickets via Nickel Plate to Niagara Falls, may secure stop-over at Chautauqua free of charge.

Be sure your tickets read via the Nickel Plate.

July 30

NIAGARA FALLS AND TORONTO.—First grand excursion to Niagara Falls and Toronto, Saturday, Aug. 1. Special train leaves Central passenger station at 7:45 p. m. \$3 to Niagara Falls \$4 to Toronto. Tickets good returning up to Aug. 6, with privilege of stop-over at Jamestown or Lakewood. Special train returns from Falls, Aug. 2. Secure sleeping car space at 141 Superior street, or depot on South Water street.

J 30

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INCOMPARABLE FOR
ENGINES AND
DYNAMOS.

Convenient to fill.
Easy to regulate.

Flow of oil can be in-
stantly shut off by simply
moving the lever down—
without disturbing the ad-
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Also made Double and
Triple Sight feed for
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Your dealer can supply
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PURE LARD OIL ONLY

SEND
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MANUFACTURERS,
WHO GUARANTEE
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VESSEL AND MACHINERY EXCHANGE.

Space under this heading may be used gratis by our advertisers or subscribers to call attention to vessels or any craft, machinery, new or second hand, that they may have for sale. Those wanting machinery of any kind, or wishing to purchase vessels, are invited to take advantage of the same offer. Each item will be limited to three lines. Letters concerning same must mention number attached to item and be addressed MARINE REVIEW, 510 Perry-Payne Building, Cleveland, O.

63—DREDGE—At auction Wednesday, July 1, 11 a.m., at a point a short distance west of Willow street bridge, old river bed, Cleveland.

64—For Sale at a Bargain—Steamboat 78 feet over all, 18 feet beam; double engines; hull in first-class condition.

65—For Sale Cheap—Two 10 x 10 Marine Engines with two 4 feet 4 inch wheels; good shafting, heater, boiler, steam pump and connections; or will exchange for small yacht or real estate.

66—Steambarge that will carry 200 tons wanted for balance of season, or longer.

67—WANTED—To purchase a tug suitable for fishing purposes 60 to 80 feet long, engine 10 to 12 square; must have good deck room and be in good condition.

1867. **PERFECT SATISFACTION GUARANTEED.** 1891.

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**Manufacturers of Strictly Pure and
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TUG MONARCH, Engine Compound, Cylinder 16 and 30 inches diameter, 30 inch.
Stroke, Steam Pressure Allowed, 125 pounds.

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THE NEW YORK, CHICAGO & ST. LOUIS R. R.

	Arrive East.	Depart East.
Buffalo Passenger	10 40 AM	10 45 AM
Chicago Passenger	9 20 PM	.....
Local Freight	4 00 PM	.....
WESTWARD.		
	Arrive.	Depart.
Chicago Passenger .....	.....	6 30 AM
Fostoria Passenger.....	6 40 PM	7 00 PM
Local Freight	3 50 PM	6 00 AM

Lorain Accommodation, Departs..... 5 10 PM

Dover Accommodation, Departs..... 1 30 PM and 5 10 PM

All trains daily except Sunday.

ERIE RAILWAY.

	Arrive.	Depart.
Youngstown Accommodation.....	*7 15 AM	†6 00 AM
New York and Pittsburgh Express	†5 15 AM	*8 10 AM
Pittsburg Accommodation.....	*12 30 PM	*11 25 AM
New York & Pittsburgh Limited.....	*9 55 AM	*2 55 PM
Mantua Accommodation	*7 20 PM	*4 20 PM
Youngstown Express.....	†9 10 PM	†6 00 PM
New York & Pittsburgh Express... ..	*6 50 PM	*11 00 PM

* Daily. † Daily except Sunday.

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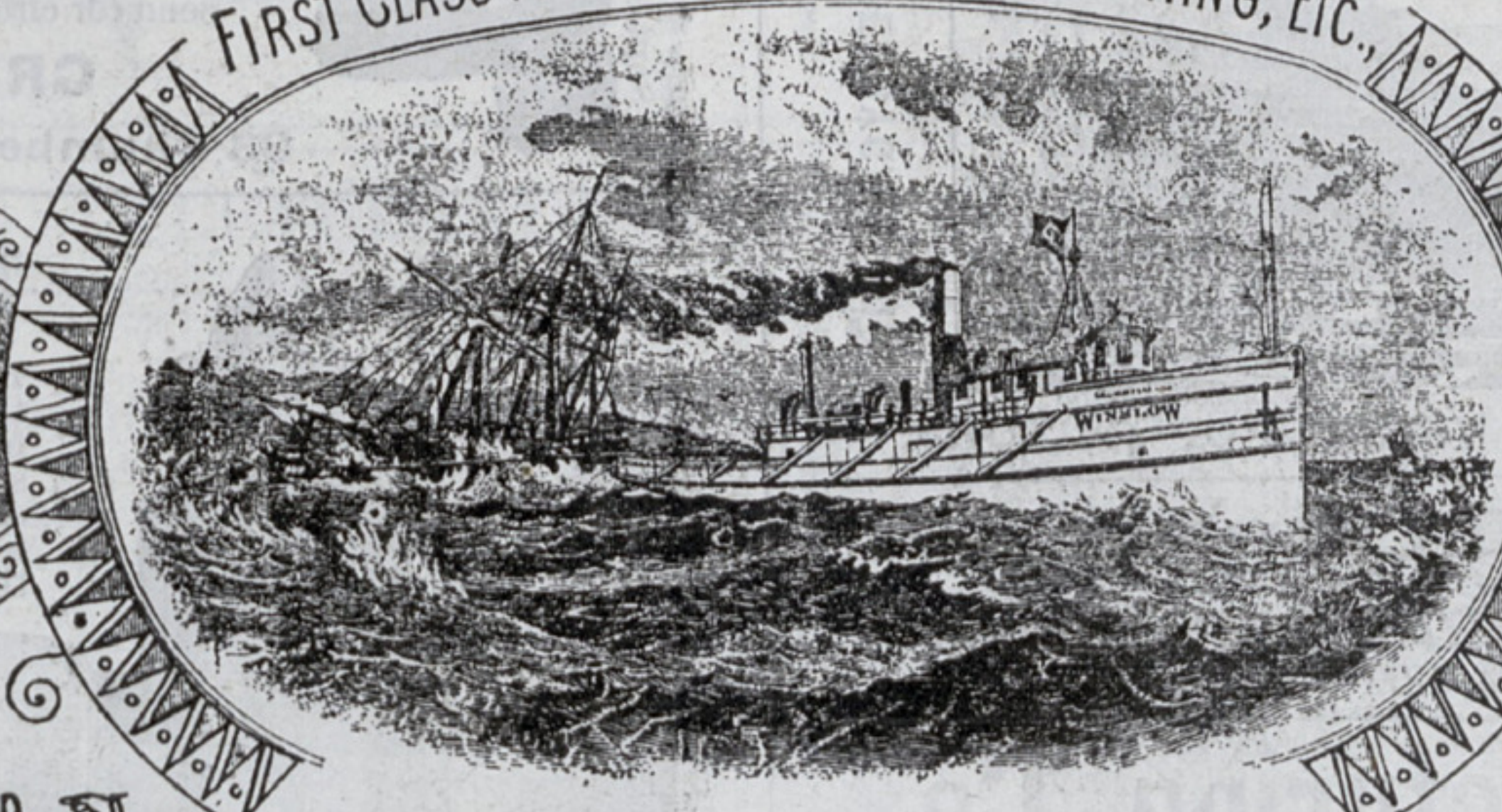
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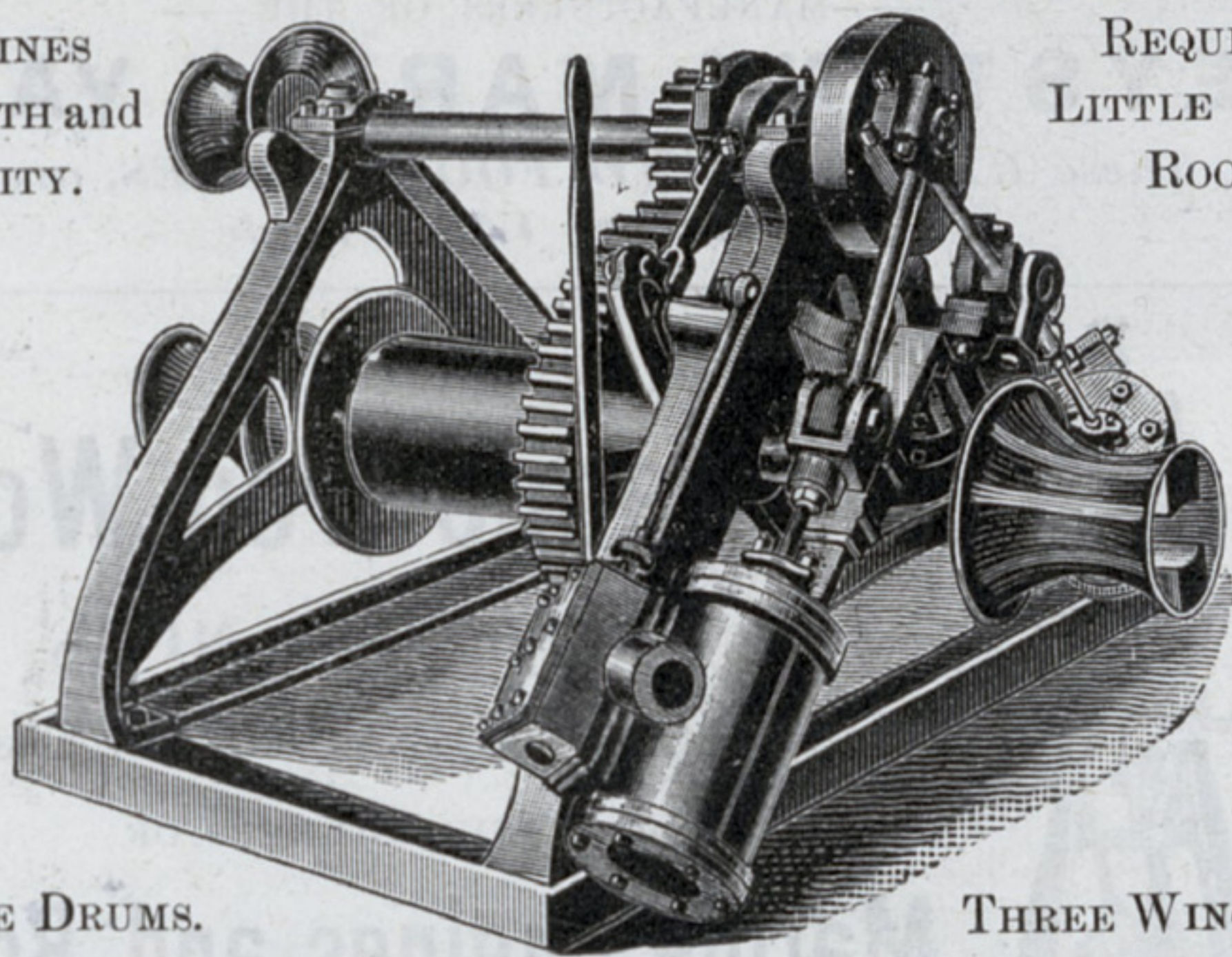


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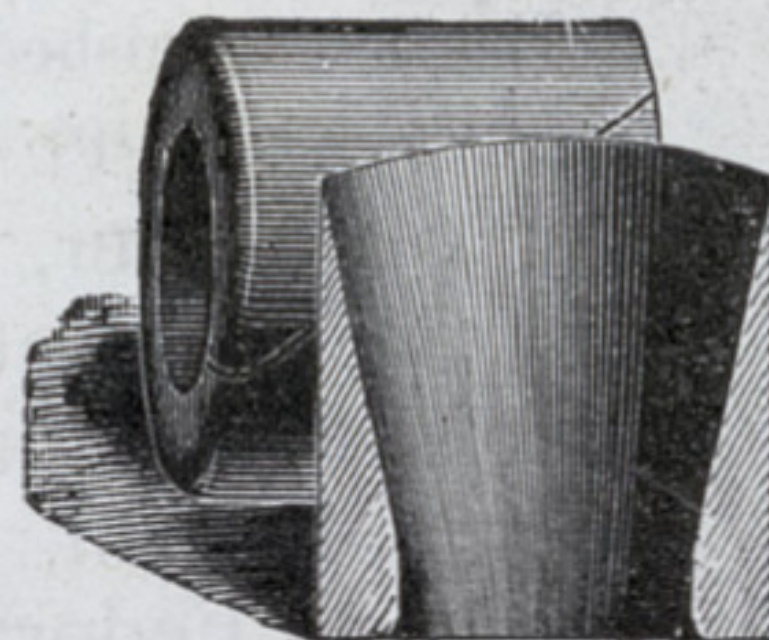
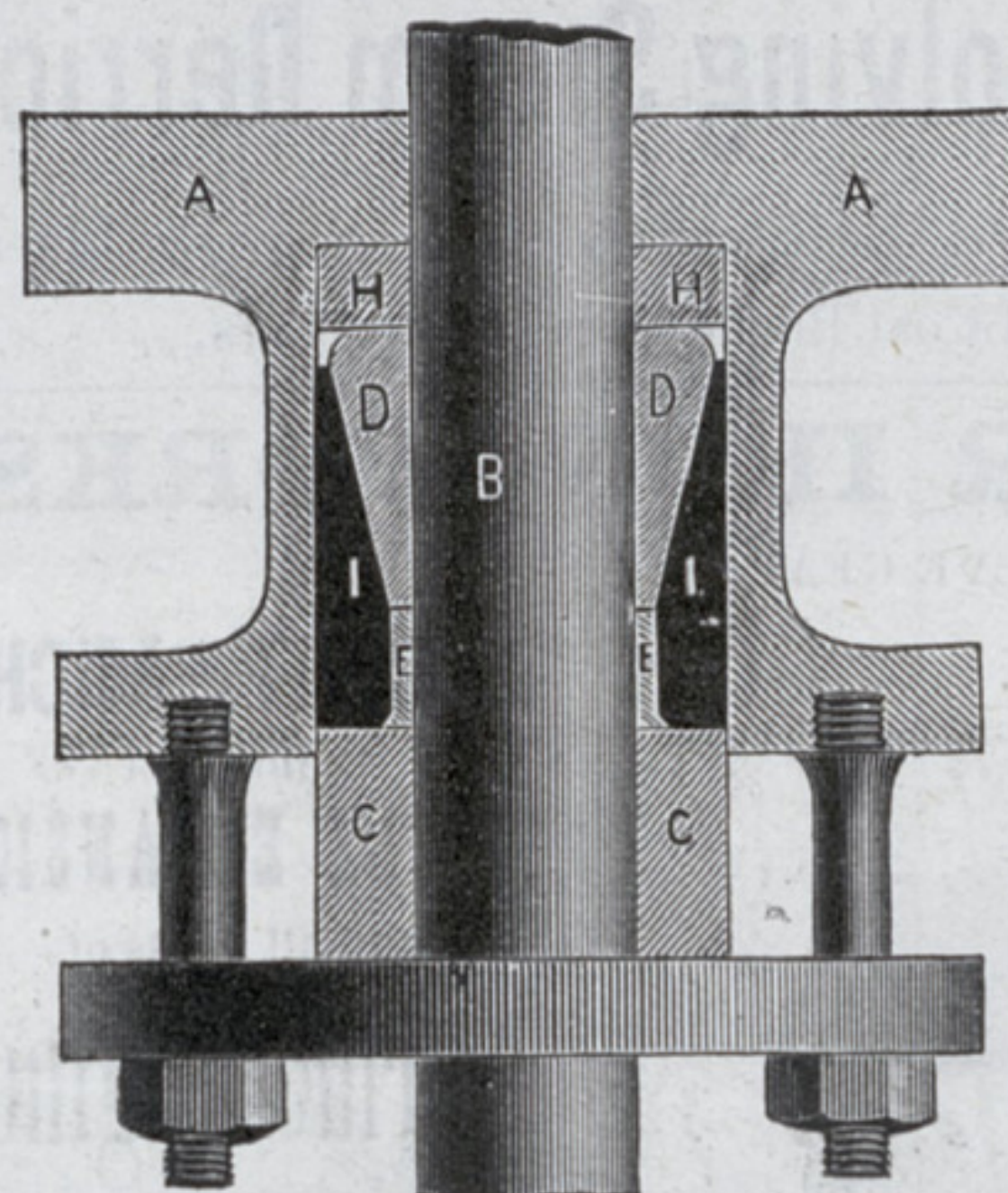
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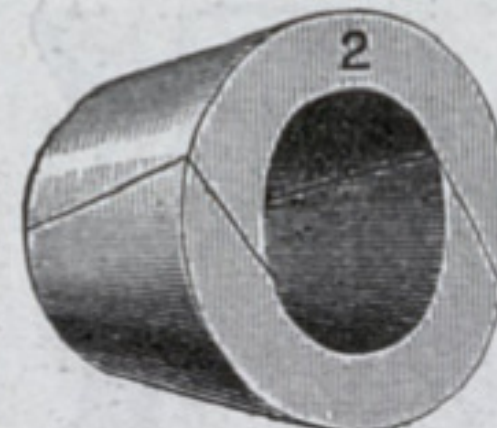
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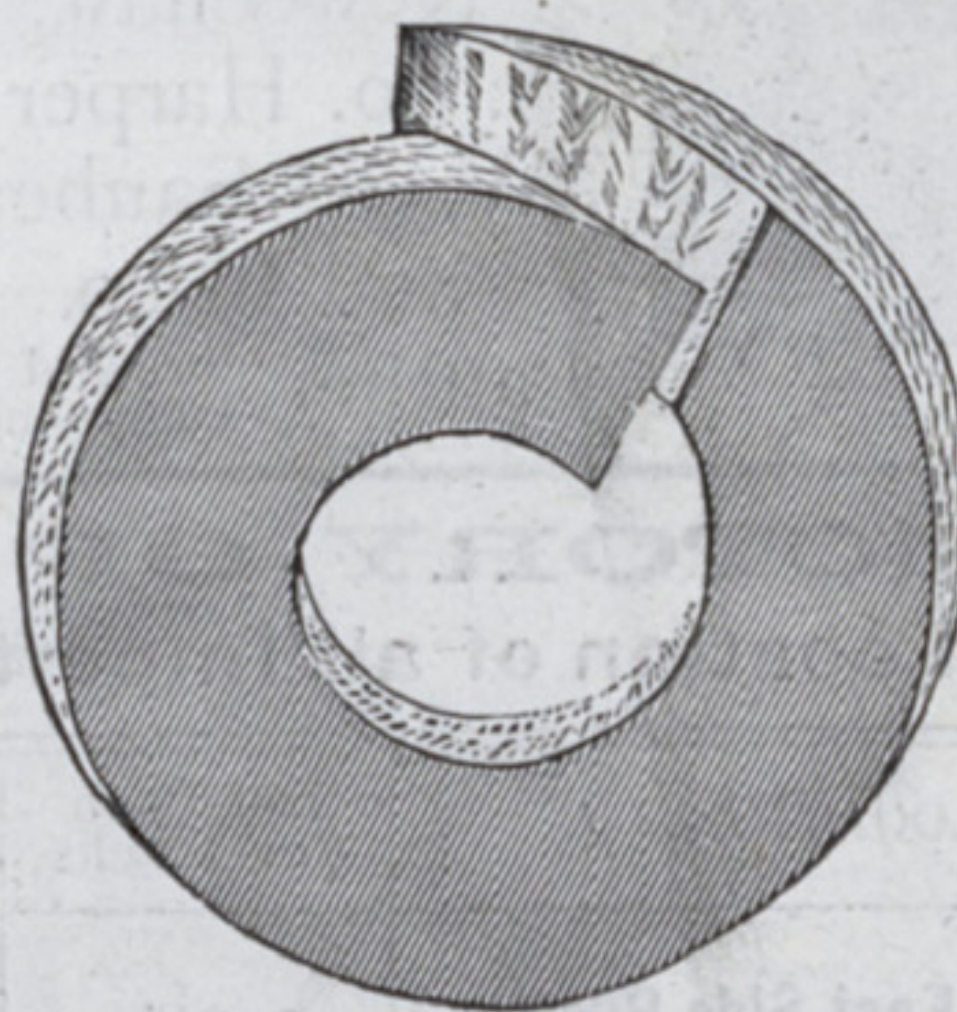
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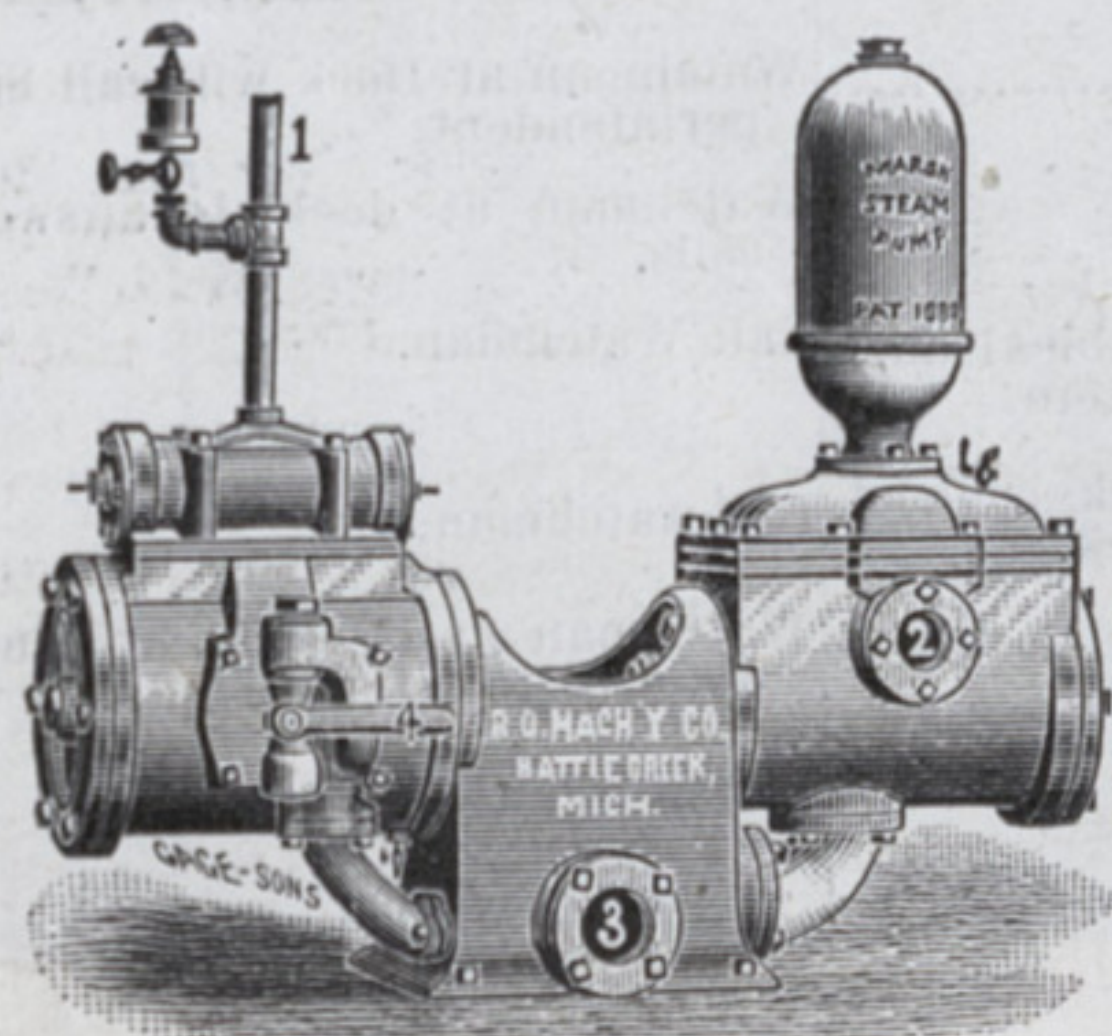
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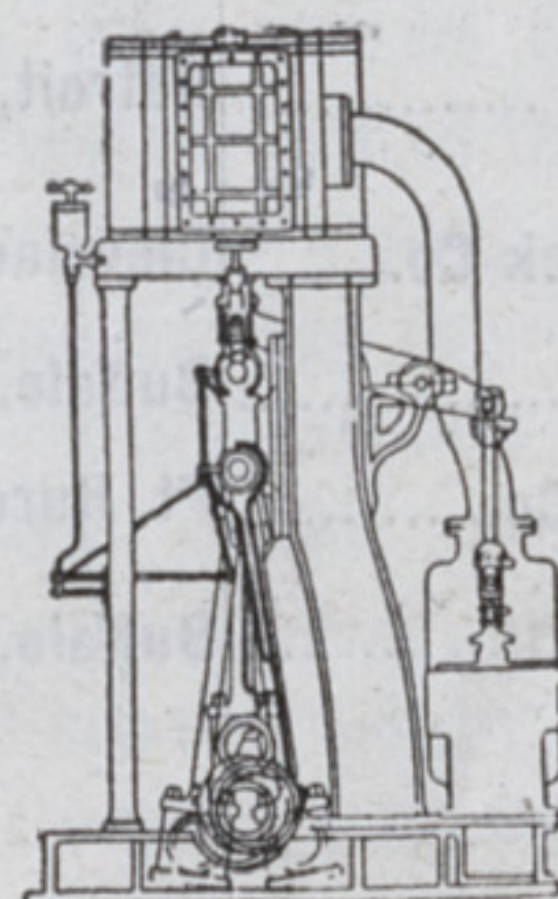
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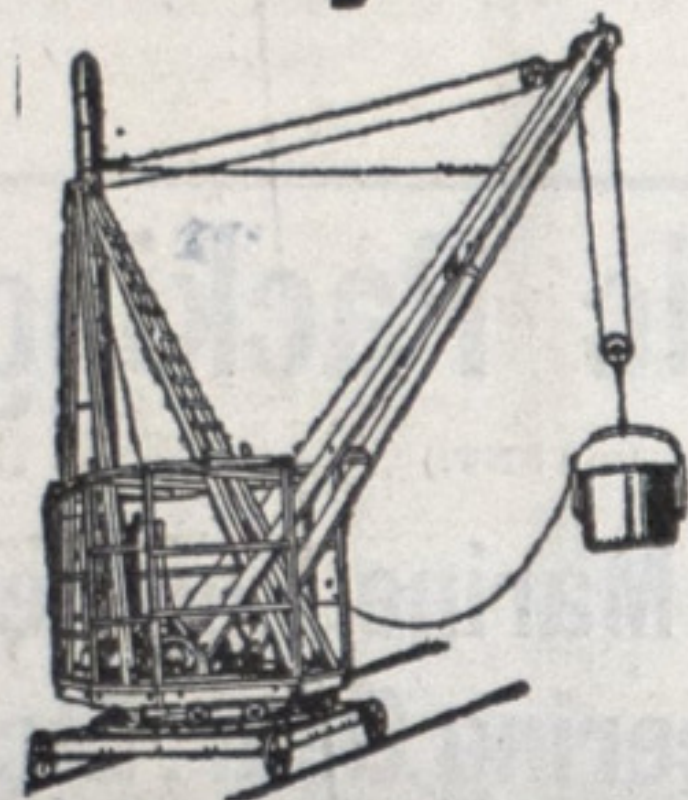
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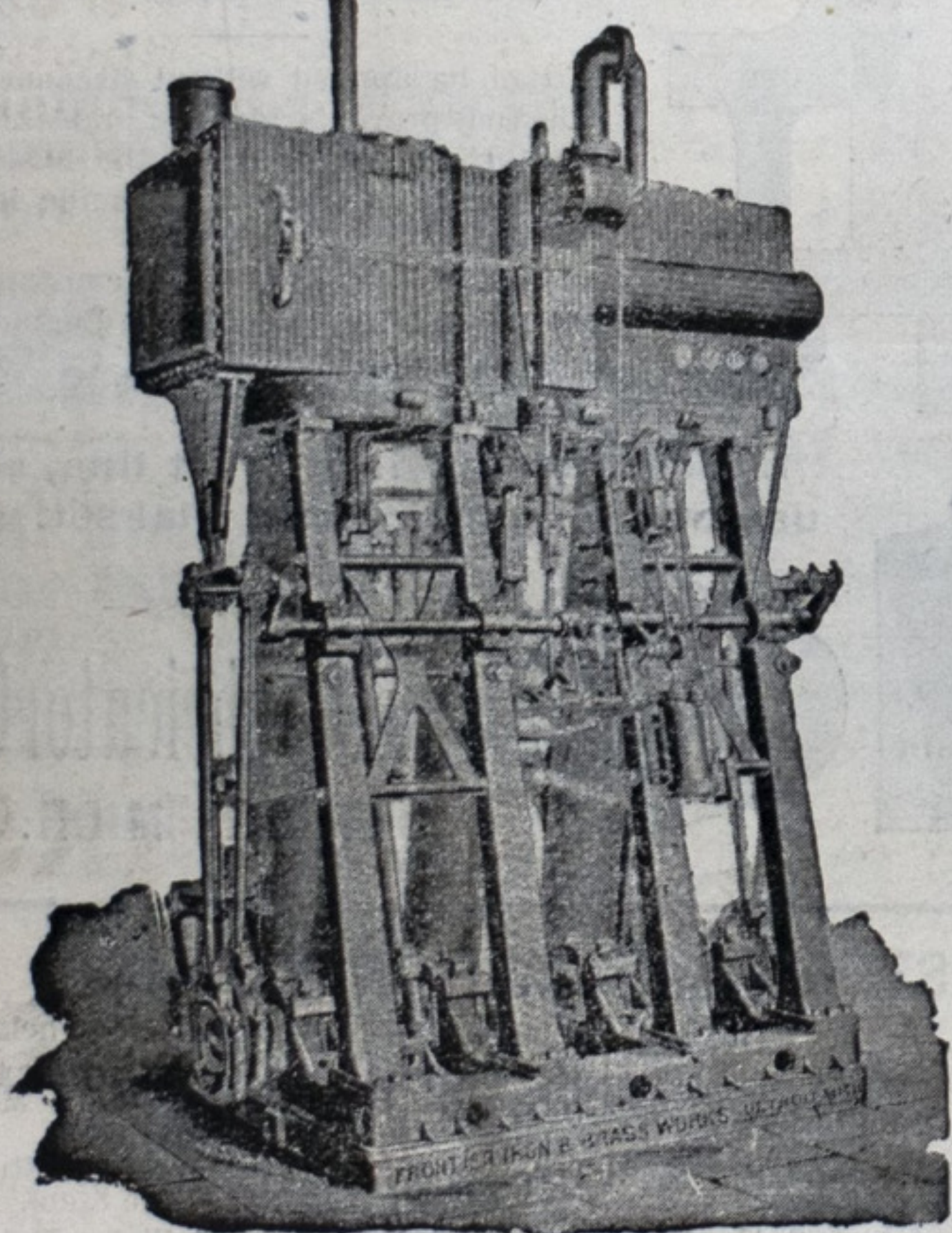
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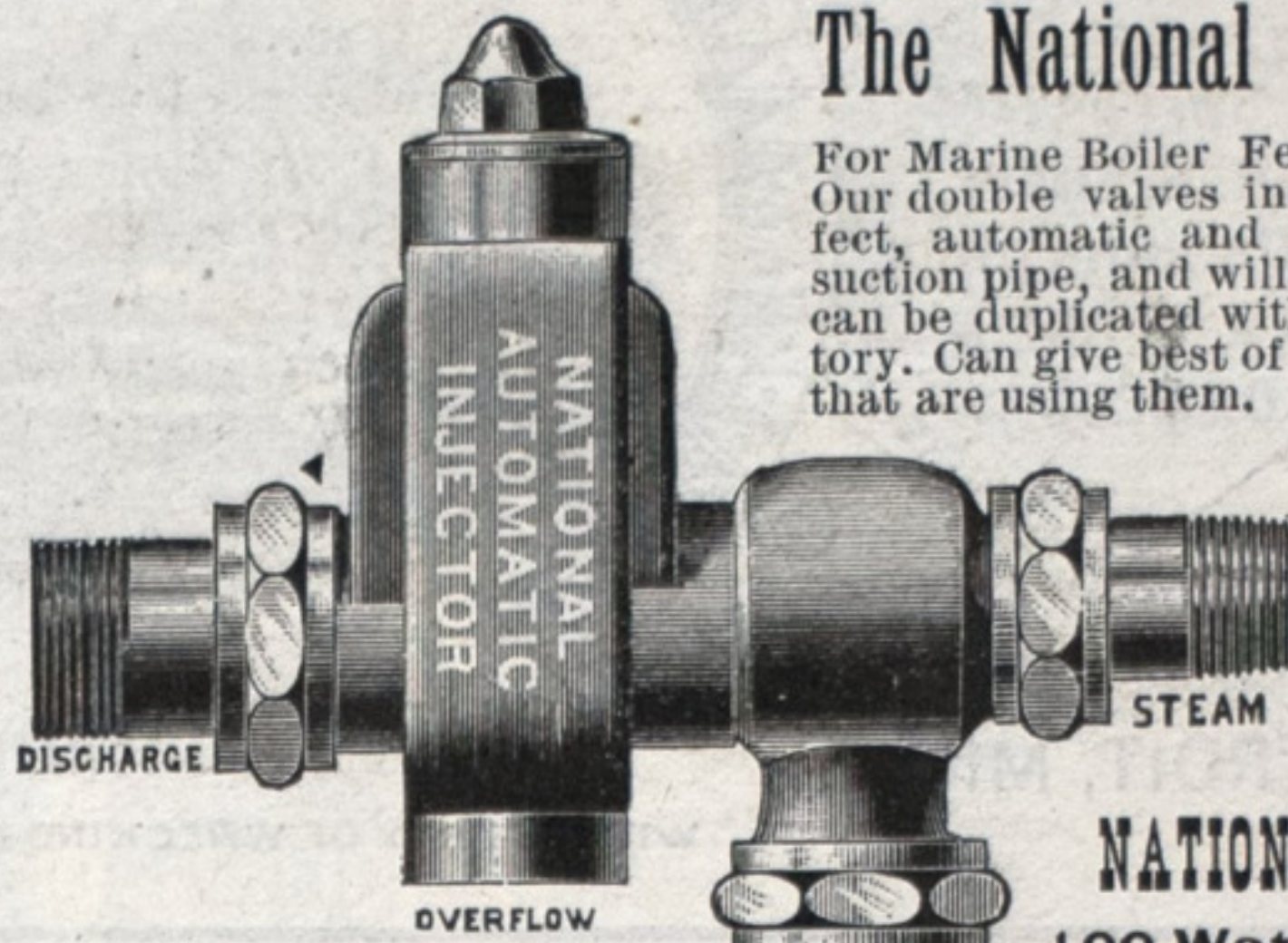
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